

CLAIMS

1. An integrated hydraulic valve actuator comprising:
 - a housing internally defining a through opening;
 - a cylindrical liner received in an upper portion of the housing, the liner internally defining a cylinder and riding surface receiving a reciprocable piston subassembly;
 - the piston subassembly including a boost piston defining an internal cylinder and a drive piston extending through and reciprocable in the internal cylinder of the boost piston;
 - the liner cylinder being open to receive pressurized fluid to axially move the piston subassembly within the cylinder; and
 - a drive piston position sensor extending into the housing and engaging a cam on the drive piston to sense the position of the drive piston within the cylinder.
2. A valve actuator according to claim 1 wherein the housing is formed of metal.
3. A valve actuator according to claim 1 wherein the liner is formed of metal.
4. An integrated hydraulic actuated valve actuator comprising:
 - a housing internally defining a stepped bore having an upper major diameter, a middle intermediate diameter, and a lower minor diameter;
 - a cylindrical liner received in the major diameter of the stepped bore, the liner internally defining a cylinder and riding surface;
 - a piston subassembly received in the cylinder for actuating an engine valve, the subassembly including a tubular boost piston defining an

internal cylinder and a drive piston reciprocable in the internal cylinder of
10 the boost piston;
the liner cylinder being open to the major diameter of the stepped bore for receiving pressurized fluid to axially move the piston subassembly within the liner cylinder; and
a drive piston position sensor extending radially into the housing
15 and operable to determine the position of the drive piston within the cylinder.

5. A valve actuator according to claim 4 wherein the boost piston has a flange engaging lower end of liner to limit upward travel of piston subassembly.

6. A valve actuator according to claim 4 wherein the flange of the boost piston is engagable with an upper end of the stepped bore minor diameter to limit downward travel of boost piston.

7. A valve actuator according to claim 4 wherein the drive piston has an upper portion received within the boost piston and a tapered lower end extending from the upper portion.

8. A valve actuator according to claim 4 wherein the tapered lower end of the drive piston is engageable with the boost piston to limit upward travel of the drive piston.

9. A valve actuator according to claim 4 wherein the piston position sensor engages the tapered lower end of the drive piston.